

It is therefore an object of the present invention to provide a hygiene apparatus and a vehicle incorporating such a hygiene apparatus which overcomes or minimises these problems.

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According to one aspect of the present invention there is provided a hygiene apparatus adapted for use within the space within a vehicle comprising a collapsible flexible membrane substantially impermeable to air, the flexible
10 membrane being adapted in use to enclose a portion of the space within the vehicle and to separate the said portion of space enclosed by the flexible membrane from a portion of the space within the vehicle provided outside the flexible membrane.

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According to another aspect of the present invention there is provided a vehicle provided with a hygiene apparatus as hereinbefore defined.

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The flexible membrane may be of bag-form.

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Means, for example an air pumping device, may be provided to maintain an air pressure difference between the portion of the space enclosed by the flexible membrane and the
25 portion of the space within the vehicle but outside the flexible membrane. Preferably, the air pressure within the portion of the space enclosed by the flexible membrane may be maintained above atmospheric pressure. Alternatively,
30 by the flexible membrane may be maintained below atmospheric pressure.

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The air pumping device may be adapted to pump air from a region exterior of the vehicle into the portion of the
35 space enclosed by the flexible membrane. Alternatively, the

air pumping device may be adapted to pump air from the portion of the space within the vehicle but outside the flexible membrane into the portion of the space enclosed by the flexible membrane.

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Additionally or alternatively, the air pumping device may be adapted to pump air from the portion of the space enclosed by the flexible membrane to a region exterior of the vehicle.

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The flexible membrane may be provided with attachment means for securing, either directly or indirectly, to an inner surface of the vehicle. The attachment means may be selected from straps, hook and loop material, hook and eye fasteners, magnets and combinations thereof.

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The flexible membrane may be provided with supporting members. The supporting members may be in the form of inflatable tubular members and/or may be in the form of collapsible supporting rods.

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The flexible membrane may be opaque or may be translucent.

Where necessary, lighting means may be provided in the form of at least one panel selected from translucent and transparent material provided in the flexible membrane.

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Additionally or alternatively, lighting means may be provided in the form of a light source, for example a battery-powered lamp, provided within the space enclosed by the flexible membrane.

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The flexible membrane may comprise a plastics material of sheet or fibre form and/or natural fibres.

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CLAIMS

1. A hygiene apparatus (1) adapted for use within the space within a vehicle (2), characterised by comprising a collapsible flexible membrane (3) substantially impermeable to air, the flexible membrane (3) being adapted in use to enclose a portion of the space within the vehicle (2) and to separate the said portion of space enclosed by the flexible membrane (3) from a portion of the space within the vehicle provided outside the flexible membrane (3).

2. A hygiene apparatus as claimed in claim 1, characterised in that the flexible membrane (3) is of bag-form

3. A hygiene apparatus as claimed in claim 1 or 2, characterised in that means (11) is provided to maintain an air pressure difference between the portion of the space enclosed by the flexible membrane (3) and the portion of the space within the vehicle but outside the flexible membrane (3).

4. A hygiene apparatus as claimed in claim 3, characterised in that the air pressure within the portion of the space enclosed by the flexible membrane (3) is maintained above atmospheric pressure.

5. A hygiene apparatus as claimed in claim 3, characterised in that the air pressure within the portion of the space enclosed by the flexible membrane (3) is maintained below atmospheric pressure.

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6. A hygiene apparatus as claimed in claim 3, 4 or 5, characterised in that the means to maintain an air pressure difference is an air pumping device (11).

5 7. A hygiene apparatus as claimed in claim 6, characterised in the air pumping device (11) is adapted to pump air from a region exterior of the vehicle into the portion of the space enclosed by the flexible membrane (3).

10 8. A hygiene apparatus as claimed in claim 6, characterised in the air pumping device (11) is adapted to pump air from the portion of the space within the vehicle but outside the flexible membrane (3) into the
15 portion of the space enclosed by the flexible membrane (3).

20 9. A hygiene apparatus as claimed in claim 6, 7 or 8, characterised in that the air pumping device is adapted to pump air from the portion of the space enclosed by the flexible membrane (3) to a region exterior of the vehicle.

25 10. A hygiene apparatus as claimed in any preceding claim, characterised in that the flexible membrane (3) is provided with attachment means (5) for securing directly to an inner surface of the vehicle.

30 11. A hygiene apparatus as claimed in any one of claims 1 to 9, characterised in that the flexible membrane (3) is provided with attachment means (5) for securing indirectly to an inner surface of the vehicle.

35 12. A hygiene apparatus as claimed in claim 10 or 11, characterised in that the attachment means (5) are

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selected from straps, hook and loop material, hook and eye fasteners, magnets and combinations thereof.

13. A hygiene apparatus as claimed in any preceding claim, characterised in that the flexible membrane (3) is provided with supporting members (13).

14. A hygiene apparatus as claimed in claim 13, characterised in that the supporting members (13) are in the form of inflatable tubular members.

15. A hygiene apparatus as claimed in claim 13 or 14, characterised in that the supporting members (13) are in the form of collapsible supporting rods.

16. A hygiene apparatus as claimed in any preceding claim, characterised in that the flexible membrane (3) is opaque.

17. A hygiene apparatus as claimed in any one of claims 1 to 15, characterised in that the flexible membrane (3) is translucent.

18. A hygiene apparatus as claimed in any preceding claim, characterised in that lighting means (9) is provided in the flexible membrane (3).

19. A hygiene apparatus as claimed in claim 18, characterised in that the lighting means is in the form of at least one panel (9) selected from translucent and transparent material.

20. A hygiene apparatus as claimed in any preceding claim, characterised in that lighting means is provided

in the form of a light source provided within the space enclosed by the flexible membrane (3).

21. A hygiene apparatus as claimed in claim 20,
characterised in that the light source is a battery-powered lamp.

22. A hygiene apparatus as claimed in any preceding claim, characterised in that the flexible membrane (3) comprises a plastics material of sheet or fibre form.

23. A hygiene apparatus as claimed in any preceding claim, characterised in that the flexible membrane (3) comprises natural fibres.

24. A hygiene apparatus as claimed in any preceding claim, characterised in that the flexible membrane (3) is provided with a resealable opening (7) suitable for a user to enter and exit the space enclosed by the flexible membrane (3).

25. A hygiene apparatus as claimed in any preceding claim, characterised in that the apparatus includes a storage unit (21) adapted to be located within the vehicle for containing the flexible membrane (3) when the flexible membrane (3) is not in use.

26. A hygiene apparatus as claimed in any preceding claim, characterised in that sanitation apparatus is provided in the space enclosed by the flexible membrane (3).

27. A hygiene apparatus as claimed in claim 26, characterised in that the sanitation apparatus is a toilet.

28. A hygiene apparatus as claimed in any preceding claim, characterised in that means is provided to prevent the transmission of undesirable noise from the space enclosed by the flexible membrane (3) to a region outside the flexible membrane (3).

29. A hygiene apparatus as claimed in claim 28, characterised in that the means to prevent the transmission of undesirable noise comprises an acoustically impermeable material forming the flexible membrane (3).

30. A hygiene apparatus as claimed in claim 28, characterised in that the means to prevent the transmission of undesirable noise comprises a noise generator provided within the space enclosed by the flexible membrane (3) to mask the undesirable noise.

31. A hygiene apparatus as claimed in any preceding claim, characterised in that means is provided to prevent the transmission of undesirable odours from the space enclosed by the flexible membrane (3) to a region outside the flexible membrane (3).

32. A hygiene apparatus as claimed in claim 31, characterised in that the means to prevent the transmission of undesirable odours comprises an odour absorber.

33. A hygiene apparatus as claimed in claim 32, characterised in that the odour absorber is a chemical scrubber.

34. A hygiene apparatus as claimed in claim 31, characterised in that the means to prevent the

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transmission of undesirable odours comprises a desirable odour generator provided within the space enclosed by the flexible membrane (3) to mask the undesirable odour.

5 35. A hygiene apparatus as claimed in any preceding claim, characterised in that means is provided to enable a user to rupture the flexible membrane in the event of an emergency to permit the user to exit the space enclosed by the flexible membrane (3).

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36. A hygiene apparatus as claimed in claim 35, characterised in that the means to rupture the flexible membrane comprises an openable seam provided in the flexible membrane.

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37. A hygiene apparatus as claimed in claim 35, characterised in that the means to rupture the flexible membrane comprises a detachable panel provided in the flexible membrane.

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38. A vehicle incorporating a hygiene apparatus as claimed in any preceding claim.